

## REMARKS

Applicants appreciate the thorough review of the present application that is reflected in the Office Action mailed August 24, 2006. For the reasons discussed herein, Applicants respectfully submit that pending Claims 1-60, as amended herein, are patentable over the cited art.

### I. The Rejections Under 35 U.S.C. § 103

Claims 1-60 stand rejected as obvious under 35 U.S.C. § 103 over U.S. Patent Publication No. 2002/0198984 to Goldstein et al. ("Goldstein") in view of U.S. Patent publication No. 2004/0102925 to Giffords ("Giffords"). (Office Action at p. 2). Applicants respectfully traverse these rejections.

#### A. The Rejection of Claim 1

Independent Claim 1, as amended, recites:

1. A data storage management system for managing a plurality of remotely located, independent data storage systems, comprising:

a central monitoring system located at a geographical location different from a geographical location of each respective remotely located, independent data storage system, wherein the central monitoring system comprises a central data repository for data regarding the status of each of the remotely located, independent data storage systems; and

a plurality of remote agent systems, wherein each remote agent system communicates with a respective one of the remotely located data storage systems, wherein each remote agent system collects metadata regarding the data stored at a respective remotely located data storage system, converts the collected data to a standardized format, and stores the collected data in the central data repository.

(Emphasis added). The Office Action states that Goldstein discloses every recitation of independent Claim 1 except for the remote agent systems "convert[ing] the collected data to a standardized format", which the Office Action states is taught by Giffords. (Office Action at pp. 2-3). Applicants respectfully submit, however, that the combination of Goldstein and Giffords does not disclose or suggest each of the above emphasized recitations of Claim 1.

As an initial matter, Applicants note that Goldstein is directed to a system for monitoring the performance of transactional servers as opposed to a "system for managing a plurality of remotely located, independent data storage systems" as recited in Claim 1. (See, e.g., Goldstein at Abstract). As discussed in Goldstein, a "transactional server" is a "multi-

user system which responds to requests from users to perform one or more tasks or 'transactions' such as viewing account information, placing an order, performing a search, or viewing and sending electronic mail." (Goldstein at ¶ 0085). The system of Goldstein uses "agents" that "simulate the actions of actual users of the transactional server" in order to monitor and report on the performance (e.g., response time) of the transactional server. In contrast, "data storage management" refers to "any type of data storage service including, but not limited to, data backup and recovery, primary data storage, data archiving, business continuity and disaster recovery, and remote data storage management." (Application at 7-8). As such, Goldstein does **not** disclose or suggest (1) "system for managing a plurality of remotely located, independent data storage systems", (2) a "central data repository for data regarding the status of each of the remotely located, independent data storage systems" or (3) remote agent systems that "communicate with a respective one of the remotely located data storage systems" as recited in Claim 1.

Additionally, Claim 1, as amended, further recites that "each remote agent system collects metadata regarding the data stored at a respective remotely located data storage system." As discussed above, the "agents" of Goldstein simulate the actions of actual users by sending requests to the transactional server and then monitoring and reporting on the performance of the server in response to the test. As such, Goldstein clearly does not disclose or suggest agents that collect metadata regarding data that is stored at remotely located data storage systems. Thus, the rejection of Claim 1 should be withdrawn for each of the above reasons.

#### B. The Rejections of Claims 2-14

Claims 2-14 depend from Claim 1, and hence the rejections of Claims 2-14 should be withdrawn for at least the reasons that the rejection of Claim 1 should be withdrawn. Additionally, Applicants respectfully submit that at least Claims 2-5, 7-8, 10, 12 or 14 are independently patentable over the cited references.

Claim 2 recites that each remote agent system includes "pattern recognition logic that can identify data patterns that precede fault conditions at a respective remotely located data storage system." The Office Action cites to paragraph 17 of Goldstein as disclosing such pattern recognition logic. (Office Action at p. 4). However, the cited portion of Goldstein does not disclose pattern recognition logic, but instead discusses programming the agents to

perform screen captures and to transmit these screen captures to the report server when a transaction fails. (Goldstein at ¶ 0017). Applicants respectfully submit that pattern recognition logic refers to logic (e.g., software, hardware and/or firmware) that detects a predetermined pattern and initiates a programmed course of action in response thereto. (Application at p. 18, lines 20-25). Software that captures and transmits screens is not "pattern recognition logic", as it does not involve detecting a predetermined pattern. Moreover, Claim 2 recites that the pattern recognition logic identifies the data patterns "that precede fault conditions." In contrast, the screen capture software of Goldstein is activated "when a transaction fails." (Goldstein at ¶ 0017). Accordingly, the cited portion of Goldstein fails to disclose or suggest the subject matter of Claim 2 for at least each of the above additional reasons.

Claim 3, as amended, recites that "a single remote agent system collects the metadata from its respective remotely located data storage system, and wherein each such single remote agent system consolidates the collected data prior to storing the collected data in the central data repository." As discussed above, in Goldstein a plurality of agents monitor each transactional server, and hence Goldstein does not disclose or suggest the recitation added by Claim 3. As such, the rejection of Claim 3 should be withdrawn for at least this additional reason.

Claim 4 recites that "each remote agent system filters collected data prior to communicating the collected data to the central monitoring system to reduce an amount of data communicated to the central monitoring system." The Office Action cites to paragraph 0127 of Goldstein as disclosing the recitations of Claim 4. (Office Action at p. 6). However, the cited portion of Goldstein refers to a filtering option that users of the system can apply when viewing information on the reports server. (Goldstein at ¶ 0127). As such, the cited portion of Goldstein fails to disclose or suggest (1) having each "remote agent system" filter collected data or (2) filtering the "collected data prior to communicating the collected data" as recited in Claim 4. As such, the rejection of Claim 4 should be withdrawn for at least each of these additional reasons.

Claim 5 recites that "each remote agent system comprises action logic that directs the remote agent system to perform one or more corrective actions at a respective remotely located data storage system in response to identifying a data pattern known to precede a fault

condition." The Office Action cites to paragraph 0261 of Goldstein as disclosing the recitations of Claim 5. (Office Action at pp. 6-7). However, the cited portion of Goldstein refers to an automated root cause analysis application that is coupled to the reports server that may be used to analyze performance data after the agents transmit the performance data to the reports server. (See, e.g., Goldstein at ¶ 0191-0195, 0261 and Figs. 1 and 26). As such, the cited portion of Goldstein fails to disclose or suggest at least including action logic at each remote agent system that performs corrective actions as recited in Claim 5. As such, the rejection of Claim 5 should be withdrawn for at least each of these additional reasons.

Claim 7 recites that each remote agent system includes "one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format; one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application; one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform; and an activity director that is configured to communicate with each EIM, SIM and PIM and to instruct each EIM, SIM and PIM as to what information to collect and store." The Office Action cites to paragraphs 0148, 0097, 0021 and Fig. 1 of Goldstein, along with the Abstract and paragraph 0021 of Giffords, as disclosing each of the recitations of Claim 7. (Office Action at pp. 8-9). Applicants also respectfully traverse this rejection.

For example, the Office Action states that the RCA system of Goldstein comprises the "activity director" of Claim 7. (Office Action at pp. 8-9). However, as discussed above, the RCA system of Goldstein is coupled to the reports server and operates on data forwarded by the agents, and thus clearly is not part of a remote agent system. Moreover, Claim 7 recites that each of a plurality of agents includes an 'activity director", whereas the system of Goldstein has a single RCA application. Likewise, the Office Action states that the controller 34 of Goldstein comprises the SIMs and the PIMs of Claim 7. (Office Action at p. 8). However, the controller 34 also is not part of the agents of Goldstein, and only a single controller is provided in Goldstein, whereas Claim 7 recites a plurality of SIMs and PIMs. Applicants likewise respectfully submit that the combination of Goldstein and Giffords do

not disclose the EIMs of Claim 7. Thus, the rejection of Claim 7 should be withdrawn for at least these additional reasons.

Claim 8 recites that "each remotely located data storage system comprises one or more data storage devices." The Office Action cites to paragraph 0018 of Giffords as disclosing the recitation of Claim 8. (Office Action at pp. 10-11). Applicants respectfully submit, however, that one of skill in the art would have had no motivation to combine Goldstein and Giffords in the manner of the pending rejections except for hindsight based on the teachings of the present invention. As noted above, Goldstein does not involve the remote management of data storage devices. Instead, Goldstein provides a way of testing transaction servers using remote agents that simulate the actions of actual users of a transactional server to monitor and test the performance (*e.g.*, speed) of the transactional server so that a variety of end user experiences can be "captured." (*See, e.g.*, Goldstein at ¶¶ 0012, 0073). While Giffords involves a storage system, there is simply no motivation to use the system of Goldstein on the data storage system of Giffords. The reason that Goldstein uses distributed agents to monitor the transactional servers is because problems with the transactional servers may be dependent on attributes of typical end users such as the user's location, computer configuration, internet router or internet service provider. (*See, e.g.*, Goldstein at ¶ 0008). Thus, by using a plurality of agents to monitor each individual server the system of Goldstein is more likely to detect the problems that typical users of the server are encountering. There is no teaching or suggestion that such monitoring would be beneficial for remotely located data storage systems. Accordingly, Applicants respectfully submit that Claim 8 is likewise patentable over the cited references for at least this additional reason.

Claim 10 recites that "the central monitoring system is configured to communicate corrective action information to each respective remote agent system and wherein each remote agent system is configured to implement the corrective action in response thereto." The Office Action cites to paragraph 0261 of Goldstein as disclosing the recitations of Claim 10. (Office Action at p. 12). However, the cited portion of Goldstein refers to actions that are taken at network elements in response to an automated root cause analysis application. (Goldstein at ¶ 0261). Significantly, the cited portion of Goldstein fails to disclose or suggest having "the central monitoring system . . . communicate corrective action information **to each**

**respective remote agent system**", as instead Goldstein involves having an application that is connected to the reports server communicates corrective action to elements in the network. Goldstein likewise does not disclose having "**each remote agent system . . . implement the corrective action**" as recited in Claim 10, as the 'agents' of Goldstein have nothing to do with the implementation of the corrective action measures. As such, the rejection of Claim 10 should be withdrawn for at least each of these additional reasons.

Claim 12 recites that "the central monitoring system is configured to analyze information from each remote agent system and identify patterns known to precede data storage problems at a respective remotely located data storage system." The Office Action cites to paragraph 17 of Goldstein as disclosing such pattern recognition logic. (Office Action at p. 13). However, the cited portion of Goldstein does not disclose "identify[ing] patterns known to precede data storage problems" as recited in Claim 12, but instead discusses having the agents transmit screen captures to the reports server when a transaction fails so that a user can view the sequence of events that preceded the transaction failure. (Goldstein at ¶ 0017). Applicants respectfully submit that the "user" of Goldstein is not a "central monitoring system", and that there is no discussion in Goldstein of the user or a central monitoring system analyzing data to "identify patterns known to precede data storage problems." Accordingly, the cited portion of Goldstein fails to disclose or suggest the subject matter of Claim 12 for at least each of the above additional reasons.

Claim 14 recites that "each customer portal allows user control and configuration of a remotely located data storage system." The Office Action cites to paragraph 0226 of Goldstein as disclosing the recitations of Claim 14. (Office Action at p. 15). However, the cited portion of Goldstein makes no reference whatsoever to "allow[ing] user control and configuration of a remotely located data storage system" – instead, it refers to letting users analyze performance, which is very different than allowing for user control and configuration. (Goldstein at ¶ 0226). As such, the rejection of Claim 14 should be withdrawn for at least each of these additional reasons.

### C. The Rejection of the Remaining Claims

Independent Claim 15, as amended, includes all of the recitations of Claim 1. Accordingly, Claim 15 is patentable for each of the reasons, discussed above, that Claim 1 is patentable over the cited art. In addition, Claim 15 includes the recitations of Claims 2 and 5.

Accordingly, Claim 15 is also patentable over the cited art for the additional reasons discussed above with respect to Claims 2 and 5.

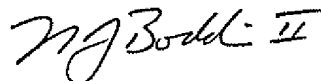
Independent Claim 27 comprises a combination of Claims 1, 7 and 13. Accordingly, Claim 27 is patentable for each of the reasons, discussed above, that Claims 1 and 7 are patentable over the cited art.

The Office Action states that each of the remaining claims are the "same as" one of the claims discussed above, and rejects the remaining claims based on the same rationale. Accordingly, the rejections of the remaining claims should be withdrawn for the same reasons, discussed above, that the rejections of the corresponding claims should be withdrawn.

## II. Conclusion

Inasmuch as the points and concerns raised in the Office Action have been addressed in full, Applicant respectfully requests that this application is in condition to pass to issue, which action is respectfully requested. Should the Examiner have any matters of outstanding resolution, he is encouraged to telephone the undersigned at 919-854-1400 for expeditious handling.

Respectfully submitted,

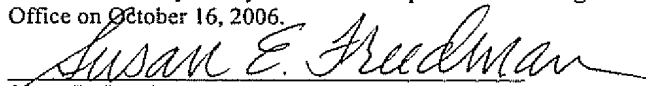


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Susan E. Freedman

Date of Signature: October 16, 2006